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| 10/617,042      | 07/11/2003  | Yoshihiro Ishida     | 03560.003336.       | 3064             |

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EXAMINER

YUAN, KATHLEEN S

ART UNIT PAPER NUMBER

2624

DATE MAILED: 12/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/617,042 | <b>Applicant(s)</b><br>ISHIDA, YOSHIHIRO |  |
|                              | <b>Examiner</b><br>Kathleen S. Yuan  | <b>Art Unit</b><br>2624                  |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 101*

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5<sup>th</sup> ed. 1993).) "Non functional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32USPQ2d1031, 1035 (Fed Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 17660 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

2. Claims 9 and 11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 9 and 11 define a computer program embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e.

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"When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" –Guidelines Annex IV). That is the scope of the presently claimed computer program can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. Any amendment to the claim should commensurate with its corresponding disclosure.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 5, 6, 9/1, 9/2 10/5, 10/6, 11/5 and 11/6 are rejected under 35 U.S.C. 102(e) as being unpatentable by U.S. Patent Application Publication No. 20050063566 (Beek et al).

5. Regarding claim 1, Beek et al discloses an image processing apparatus comprising (fig. 3): image input means for inputting an image, a camera (fig. 3, item 21); image attached information input means for inputting information, the range data, attached to the image input by the image input means (fig. 3, item 30); face detection means (fig. 3, item 46) for detecting a face from the image input by the image input means; face-detection angle-range information determination means (fig. 3, item 44) for determining an angle range, the angle range (pg. 5, pp. 0052) which is found using the data from inputted by item 30, used in a process of detecting a face from the input image, the process being all steps taken to detect the face, on the basis of the image attached information input by the image attached information input means (pg. 10, pp. 0119), and process control means (fig. 3, item 40) having a mode, or function ("select function" in fig. 3), to control the execution of the face detecting process on the basis of information indicating the angle range determined by the face-detection angle-range information determination means (pg. 10, pp. 0119).

6. Regarding claim 2, Beek et al discloses that process control means controls the execution of the face detecting process in predetermined angle increments, since the camera moves at a predetermined 45 degrees every 100 milliseconds, thus the increments are 45 degrees/100 millisecond (pg. 2, pp. 0016).

7. Claim 5 is rejected for the same reasons as claim 1. Thus, the arguments analogous to that presented above for claim 1 are equally applicable to claim 5. Claim 5 distinguishes from claim 1 only in that claim 5 is an image processing method, and claim 1 is an apparatus. Since an apparatus carries out a method, prior art applies.

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8. Claim 6 is rejected for the same reasons as claim 2. Thus, the arguments analogous to that presented above for claim 2 are equally applicable to claim 6. Claim 6 distinguishes from claim 2 only in that they have different dependencies, both of which have been previously rejected. Therefore, prior art applies.

9. Claims 9/1, 9/2 10/5, 10/6, 11/5 and 11/6 are rejected for the same reasons as claim 1. Thus, the arguments analogous to that presented above for claim 1 are equally applicable to claims 9/1, 9/2 10/5, 10/6, 11/6 and 11/5. Claims 9/1, 9/2 10/5, 10/6, 11/6 and 11/5 distinguish from claim 1 only in that claims 9/1, 9/2 10/5, 10/6, 11/6 and 11/5 are program and storage medium claims and claim 1 is an apparatus claim and they have different dependencies. Since all the dependencies have been previously rejected, and since the preamble to the claim is not given any patentable weight because it doesn't breath life or vitality into the claim, and since all other limitations are addressed in claim 1, prior art applies.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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11. Claims 3/1, 3/2, 7/5 and 7/6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beek et al, as applied to claims 1, 2, 5 and 6 above, in view of U.S. Patent No. 7050607 (Li et al).

Regarding claim 3/1, Beek et al discloses all of the claimed elements as set forth above and incorporated herein by reference.

Beek et al does not disclose expressly an image rotation means for rotating an image, wherein the process control means allows the image rotation means to rotate the input image in order to form images in predetermined angle increments, and performs the face detecting process to the respective images.

Li et al discloses an image rotation means, a multi-view face detection system, that rotates an image by finding multi views (col. 6, lines 22-23). The rotation means rotates the input image in order to form images in predetermined angle increments (col. 6, lines 27-32) using different detectors, and performs a face detecting accordingly (col. 6, lines 37-57).

Beek et al and Li et al are combinable because they are from the same field of endeavor, i.e. facial image processing (col. 1, lines 10-11).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to rotate an image for multiple views.

The suggestion/motivation for doing so would have been to provide better security by providing many views of the subject, and also providing better recognition since there are more images to be applied

Therefore, it would have been obvious to combine the apparatus of Beek et al with the rotation means of Li et al to obtain the invention as specified in claim 3/1.

12. Claims 3/2, 7/5 and 7/6 are rejected for the same reasons as claim 3/1. Thus, the arguments analogous to that presented above for claim 3/1 are equally applicable to claims 3/2, 7/5 and 7/6. Claims 3/2, 7/5 and 7/6 distinguish from claim 3/1 only in that they have different dependencies, both of which have been previously rejected. Therefore, prior art applies.

13. Claims 4/1, 4/2, 8/5 and 8/6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beek et al, as applied to claims 1, 2, 5 and 6 above, in view of U.S. Patent Application Publication No 20030123713 (Geng).

Regarding claim 4/1, Beek et al discloses all of the claimed elements as set forth above and incorporated herein by reference. Beek et al further discloses a detection process of recognizing a person, thus, detecting whom the person is (pg. 10, pp. 0121), which can also be interpreted as part of the detection process of claim 1.

Beek et al does not disclose expressly reference data conversion means for converting face detection reference data used for face detection into reference data for a tilted face, wherein the process control means allows the reference data conversion means to convert the face detection reference data into reference data for a tilted face in order to form tilted-face reference data in predetermined angle increments, and executes the face detecting process to the input image using the formed tilted-face reference data.



Geng discloses reference data conversion means, an enroller (fig. 10) for converting face detection reference data used for face detection, or identification, into reference data for a tilted face (fig. 11, database with multiple faces with different tilt angles). Furthermore, Geng discloses the process control means allowing the reference data conversion means to convert the face detection reference data for a tilted face in order to form tilted-face reference data in predetermined angle increments (fig. 10, tilted face database, in predetermined angle increments since the reference data is predetermined), and executes the face detecting process to the input image using the formed tilted-face reference data (fig. 9, item 905), since face of the subject, which Beek et al provides, will be detected using the reference data (fig. 9, item 903).

Beek et al and Geng are combinable because they are from the same field of endeavor, i.e. facial image processing (Geng, pg. 1, pp. 0002).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to form a tilted face database for the facial detection/ recognition.

The suggestion/motivation for doing so would have been to increase the accuracy of the identification by providing more views of the subject, since many times in a security environment, a straight on shot is hard to achieve.

Therefore, it would have been obvious to combine the apparatus of Beek et al with the tilted face database of Geng to obtain the invention as specified in claim 4/1.

14. Claims 4/2, 8/5 and 8/6 are rejected for the same reasons as claim 4/1. Thus, the arguments analogous to that presented above for claim 4/1 are equally applicable to claims 4/2, 8/5 and 8/6. Claims 4/2, 8/5 and 8/6 distinguish from claim 4/1 only in that

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they have different dependencies, both of which have been previously rejected.

Therefore, prior art applies.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen S. Yuan whose telephone number is (571)272-2902. The examiner can normally be reached on Monday to Thursdays, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (571)272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KY  
11/28/2006

  
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SUPERVISORY PATENT EXAMINER